AD-5: Expand Use of 3-Mile Separation Standard

Expand use of 3-mile separation standards and terminal separation procedures.

Background

Current separation standards allow for 3-mile separation when within 40-miles of a single radar sensor. By identifying opportunities to maximize the use of the 3-mile separation standard, additional airspace efficiency may be achieved. This would afford more efficient control of aircraft during transition to and from the airport.

Ops Change Description

Currently, expansion of designated terminal airspace is the only planned opportunity to gain this type of efficiency. Other methods of improving surveillance, such as improved radar update rates or other forms of advanced surveillance, may offer options to expand usage of 3-mile standards or reduce separation standards in transition airspace in the future. In particular, deriving equivalent position accuracy as that within 40 miles of a radar may be achievable through evolving technologies like ADS-B and/or improved surveillance data processing.

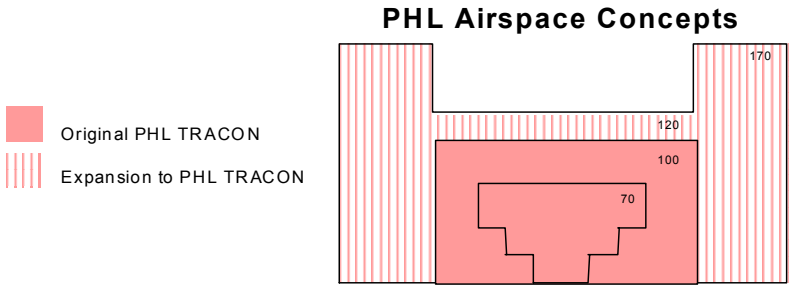
Three methods of expanding designated terminal airspace are described here:

- AD-5.1: Expansion of terminal procedures application by reassigning en route airspace to terminal facilities (does not require consolidation of facilities).
- AD-5.2: "Terminalization of the airspace" through consolidation of terminal and en route operations for airspace servicing the New York metropolitan area.
- AD-5.3: Consolidation of terminal airspace with acquisition of en route airspace.

Benefit, Performance and Metrics

- Increase in percent effectiveness for top airports
- Increase in on time departure rate
- Decrease in excess taxi times
- Decrease in ground delay programs

AD-5.1 Expansion of Terminal Procedure Applications



Scope and Applicability

- Terminal redesign projects in several areas are considering reassigning airspace currently controlled by en route facilities and releasing airspace responsibility to adjoining terminal control facilities to reduce separation, coordination, intermediate level-offs, and other TRACON to center handoff restrictions.
- The applicability of this approach (where en route airspace can be reassigned to terminal control) is dependent on available infrastructure (communications, navigational aids, surveillance coverage, automation upgrades, and facilities) and ability of the workforce to accept additional traffic.
- Current projects include expansion of terminal airspace at Philadelphia, Santa Barbara (Central California), Phoenix, Cincinnati, Seattle, Charlotte, Southern California, Northern California, and Chicago.

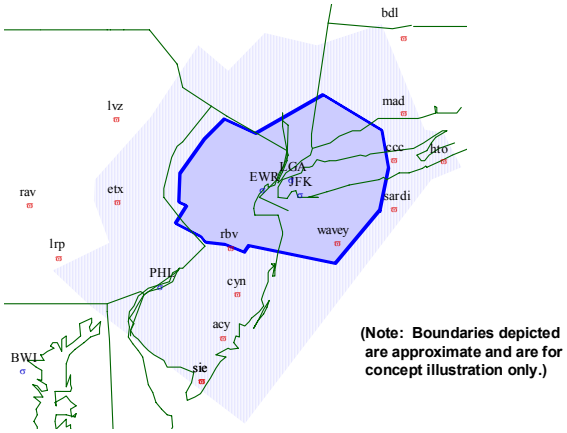
Key Decisions

- None identified.

Key Risks

- Environmental impact assessment may be required. The implementation timeframe for these projects could increase significantly depending on the level of environmental assessment required by the proposed change.

AD-5.2 Single Facility for En Route and Terminal Operations in New York



Scope and Applicability

- The FAA is in the early planning stages of airspace design and control changes surrounding the airspace supporting the New York metropolitan area. This concept involves "terminalization" of the en route airspace controlled by the en route facilities abutting the New York TRACON. "Terminalization" of the airspace will allow for reduced separation and better coordination resulting in greater efficiency in airspace management around New York.
- Effected control facilities include ZNY, ZBW, ZDC in en route airspace; N90, PHL TRACON in terminal airspace.
- Affected major airports: LGA, JFK, EWR, PHL.
- Also affects flows into and out of ZOB and may affect flows to Boston.

Key Decisions

- FAA should determine if a single facility will be pursued.

Key Risks

- Significant environmental analysis will need to be completed. The current NY/NJ/PHL redesign includes environmental analysis to support new airspace and procedures, but does not include environmental analysis for a new building. Environmental impact assessment for a new building will be needed and has not been included in current environmental plans for NY/NJ/PHL Redesign.
- Determine affordability of proposed consolidation of operations. Cost-benefit assessment of the single-facility concept must be completed, and a decision must be made as to how to proceed with the building portion of the concept.
- Several infrastructure changes will be required to implement this concept. Current plans have identified these needed changes and teams are being formed to conduct necessary analysis. Issues being examined by AEA include:

  - Rerouting communications and radar data to the consolidated facility or (for high altitude airspace) to the Boston and Washington ARTCCs.
  - Providing the kind of radar coverage that would permit use of three-mile separation throughout the airspace in question, including the surveillance data processing that would be required.
  - Providing flight data processing for the consolidated facility.
  - Creating the necessary infrastructure (e.g., power supply, cooling) associated with the building in which a consolidated facility would reside.
- Security and contingency planning issues must be identified and resolved.

AD-5.3 TRACON Consolidation

Potomac Consolidated TRACON

Scope and Applicability

- TRACON consolidation involves merging separate terminal radar approach controls into a single, consistent operation housed in one building. For example, the Potomac Consolidated TRACON will include the consolidation of Baltimore, Andrews, National, and Dulles TRACONs. TRACON consolidation includes airspace redesign, procedures definition and building a common facility.
- Terminal airspace and facility consolidation/new building projects include: Potomac Consolidated TRACON (2003), Boston Consolidated TRACON (2004), Atlanta continued consolidation (2005), and Houston (in design, awaiting JRC).Houston is not a TRACON consolidation project in the pure sense, but is dependent on a new building to accommodate proposed operational and airspace changes.

Key Decisions

- None identified.

Key Risks

- Several infrastructure changes will be required to implement facility consolidation:
  - Rerouting communications and radar data to the consolidated facility.
  - Providing flight data processing for the consolidated facility.
- Creating the necessary infrastructure (e.g., power supply, cooling) associated with the building in which a consolidated facility would reside.
- NATCA has stated that they do not support additional TRACON consolidation.
- Security and contingency planning issues must be identified and resolved.